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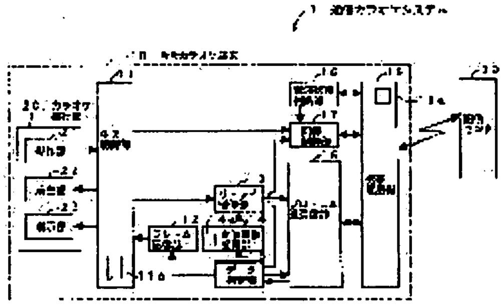
(54) COMMUNICATION KARAOKE SYSTEM, COMMUNICATION KARAOKE TERMINAL AND DISTRIBUTION CENTER USED FOR SYSTEM

(57)Abstract:

PROBLEM TO BE SOLVED: To realize distribution of music data efficiently in the communication karaoke system where music data are distributed via a radio channel for mobile communication.

SOLUTION: When a data discrimination section 15 of a communication karaoke terminal 10 discriminates normality of data in the unit of frames, a frame storage section 12 stores the frame and a table 14a denoting a reception result in a reception result storage section 14 is updated. When the data discrimination section 15 discriminates that communication is disable on the way of reception of music data, a line control section 17 interrupts once a line. When the line is connected to a distribution center 30 again, a retrial control section 13 informs a frame number not received to the distribution center 30 based on the table 14a denoting the reception result in the reception result storage section 14 to request redistribution. On the other hand, upon the request of re-transmission of the communication karaoke terminal 10, the distribution center 30 distributes again the corresponding frame.



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[Claim(s)]

[Claim 1] The distribution center which distributes the music data of karaoke music, and the online karaoke terminal which receives said music data from said distribution center through a wireless circuit, It is the becoming online karaoke system. since — said distribution center It is what has a division data distribution means to distribute said music data as two or more division data. Said online karaoke terminal A receiving track record storage means to memorize any of two or more of said division data were received, A re-distribution demand means to require said distribution center to re-distribute non-received division data based on the receiving track record memorized by this receiving track record storage means, A preparation and said division data distribution means are an online karaoke system characterized by re-distributing only the division data which are not received [said] according to the demand from said re-distribution demand means.

[Claim 2] It is the online karaoke system characterized by having a communication link disabling decision means to judge that said online karaoke terminal became communication link impossible further in the online karaoke system according to claim 1, and a line connection activation means to perform re-connection actuation to a circuit when having become communication link impossible with this communication link disabling decision means is judged.

[Claim 3] It is the online karaoke system characterized by being constituted so that said re-connection actuation may be performed after fixed time amount progress when it is judged that said line connection activation means became communication link impossible with said communication link disabling decision means in the online karaoke system according to claim 2.

[Claim 4] In an online karaoke system according to claim 2 said online karaoke terminal Furthermore, it has an electric-wave receive state detection means to detect an electric-wave receive state, and an electric-wave receive state decision means to judge whether the electric-wave condition detected by this electric-wave receive state detection means is good. When it is judged that said line connection activation means became communication link impossible with said communication link disabling decision means, The online karaoke system characterized by waiting for an electric-wave receive state to become good based on the decision result by said electric-wave receive state decision means, and being constituted so that said line connection actuation may be performed.

[Claim 5] It is the online karaoke terminal which receives said music data through a wireless circuit from the distribution center which distributes the music data of karaoke music as two or more division data. A receiving track record storage means to memorize any of two or more of said division data were received, The online karaoke terminal characterized by having a re-distribution demand means to require said distribution center to re-distribute non-received division data, based on the receiving track record memorized by this receiving track record storage means.

[Claim 6] It is the distribution center which is equipped with a division data distribution means to be the distribution center which distributes the music data of karaoke music to an online karaoke terminal through a wireless circuit, and to distribute said music data as two or more division data, and is characterized by said division data distribution means re-distributing only the division data which correspond according to the re-distribution demand from said online karaoke terminal.

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1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the online karaoke system which distributes the music data of the karaoke music accumulated in the distribution center to an online karaoke terminal through a wireless circuit.
[0002]
[Description of the Prior Art] Conventionally, the online karaoke system which distributes the music data of the karaoke music memorized in the distribution center to an online karaoke terminal through communication lines, such as the telephone line, is known. The online karaoke terminal in such a system was premised on using only communication lines, such as the telephone line currently arranged in the predetermined installation, and was what is used being fixed to the predetermined installation.
[0003] By the way, the mobile communication by a cellular-phone system etc. has spread quickly in recent years. Then, it is possible to perform distribution of the music data in the conventional online karaoke system through the wireless circuit for mobile communication using a cellular-phone system etc. If music data are distributed through this wireless circuit, it can also be used in the car which moves an online karaoke terminal, for example.
[0004] However, when using the music data distribution approach in the conventional online karaoke system by mobile communication as it is is considered, there is a problem as shown below. In mobile communication, circuit quality may deteriorate with migration of mobile stations, such as a car carrying people with a portable telephone or a land mobile radiotelephone. That is, in order to come to be influenced of a surrounding building or to use the standing wave by the multiple wave by migration of a mobile station, phasing comes to arise in received electric field. In such a case, if the condition that circuit quality deteriorated beyond fixed time amount continues, in order to avoid that a circuit is occupied in the condition of circuit quality being remarkable and having deteriorated from a viewpoint of a deployment of a frequency, a circuit is compulsorily cut by a base station or the mobile station.
[0005] Therefore, when the online karaoke terminal in an online karaoke system is carried in a mobile station, communicating may become impossible by compulsory line disconnection when degradation of circuit quality or degradation of the circuit quality continues in the middle of distribution of the music data from a distribution center. In such a case, it is necessary to reconnect the circuit between an online karaoke terminal and a distribution center. By the way, although it is common to divide music data into the data of the communication link transmission unit call a frame in the conventional online karaoke system, and to transmit, if connection of a circuit is make, it is the specification which transmits music data from the start of the music data, and all the frames that the online karaoke terminal received normally before line disconnection will become futility. Therefore, if it becomes in the middle of distribution of music data with communication link impossible repeatedly and re-connection of a circuit is repeated, the distribution effectiveness of music data will fall extremely.
[0006] This invention is made in order to solve the trouble mentioned above, and it aims at realizing distribution of efficient music data in the online karaoke system which distributes music data through a wireless circuit.
[0007]
[The means for solving a technical problem and an effect of the invention] The online karaoke system according to claim 1 made in order to solve the above-mentioned purpose It is the online karaoke system which consists of a distribution center which distributes the music data of karaoke music, and an online karaoke terminal which receives music data from a distribution center through a wireless circuit. A distribution center is what has a division data distribution means to distribute music data as two or more division data. An online karaoke terminal A receiving track record storage means to memorize any of two or more division data were received, Based on the receiving track record memorized by this receiving track record storage means, it has a re-distribution demand means to require a distribution center to re-distribute non-received division data, and a division data distribution means carries out re-distributing only non-received division data according to the demand from a re-distribution demand means as the description.
[0008] In the online karaoke system of this invention, an online karaoke terminal receives the music data of karaoke music distributed from a distribution center through a wireless circuit. For example, it is also considered that an online karaoke terminal connects the portable telephone which is a walkie-talkie for mobile stations (henceforth a "migration machine"), and if it is an object for mount, it will also be considered also using a land mobile radiotelephone machine as a migration machine and that it is that in which it thinks or the online karaoke terminal itself has the function of a migration machine.
[0009] In the online karaoke system of this invention, the division data distribution means of a distribution center

distributes the music data of karaoke music as two or more division data. It is also considered that the number of music data is one, and it is also considered here that they are two or more music. Moreover, division data can consider that it is data of the block (called frame in HDLC procedure) unit of the number system which is for example, a communication link transmission unit. In addition, division data can consider dividing variously not a block that was not necessarily mentioned above but music data.

[0010] On the other hand, at an online karaoke terminal, any of two or more division data distributed from a distribution center were received memorizes for a receiving track record storage means. Moreover, the re-distribution demand means of an online karaoke terminal requires re-distribution of non-received division data of a distribution center based on the receiving track record memorized by the receiving track record storage means. You may fix beforehand to how many in order to judge non-received division data at this time, the music data of one music are divided and transmitted from a distribution center by notifying beforehand how many division data are distributed to an online karaoke terminal. or [and / that the receiving track record storage means received which division data of the 100 division data when music data were divided and distributed to 100 division data] — memorizing — ** — it is the condition to say. moreover, the demand of the division data which are not received by the re-distribution demand means — for example, division data are alike, respectively, attach a unique number, and it is made to distribute as the block of a number system mentioned above is used as division data, and it can think carrying out, when a re-distribution demand means notifies this number to a distribution center. Moreover, in case re-distribution of non-received division data is required, the number of non-received division data may be notified and the number of division data [finishing / reception] may be notified. What is necessary is just to judge the number of non-received division data in the latter based on the number of the division data [finishing / reception] notified by the distribution center side.

[0011] And the division data distribution means of a distribution center re-distributes only non-received division data according to the demand from the re-distribution demand means of an online karaoke terminal. For example, when the number of non-received division data is notified, only the division data corresponding to those numbers are re-distributed.

[0012] In the mobile communication through a wireless circuit, as mentioned above, circuit quality may deteriorate with migration of a mobile station. Therefore, when having considered distributing the music data which minded the wireless circuit for mobile communication in the conventional online karaoke system it becomes in the middle of distribution of music data with communication link impossible by compulsory line disconnection when degradation or its degradation condition of circuit quality continues, it will be necessary to broadcast the whole music data again. That is, all the data normally received at the online karaoke terminal before line disconnection will become futility. The distribution effectiveness of music data is made to fall as a result.

[0013] On the other hand, in the online karaoke system of this invention, music data are memorized by the division data unit, and it memorizes any of division data were received. And even if it is a time of the line disconnection which originates, for example in degradation and its degradation of circuit quality arising, and becoming communication link impossible, the division data which are not received of the division data with which the re-distribution demand means of an online karaoke terminal constitutes music data are required, and only division data non-received [these] are distributed among the music data in the middle of distribution by the division data distribution means of a distribution center. By this, even if it is the case where distribution of music data is interrupted on the way, the division data which the online karaoke terminal received normally and has memorized do not become useless, but can shorten communication link time amount as a result. Therefore, the distribution effectiveness of music data can be raised.

[0014] By the way, that distribution of music data is interrupted on the way can consider the time of being in communication link disabling by degradation of circuit quality which was mentioned above etc. A user may make a judgment of that it would be in such communication link disabling, and an online karaoke terminal may carry out automatically. Moreover, if it considers carrying out call origination from an online karaoke equipment side after becoming communication link impossible, the case where the case where a user carries out, and an online karaoke terminal perform re-dialing operation to a circuit automatically similarly can be considered. For example, what is necessary is to know the time amount which acquisition of the music data takes, and just to judge communication link impossible, when music data are unacquirable, even if the time amount passes when a user judges communication link impossible. Moreover, what is necessary is just to carry out call origination of the distribution center again with the portable telephone connected to the online karaoke terminal, when a user performs re-dialing operation to a circuit. However, considering reducing a user's time and effort, it is effective that an online karaoke terminal considers as the configuration performed automatically. For example, as shown in claim 2, it is possible to consider an online karaoke terminal as a configuration equipped with a communication link disabling decision means to judge having become communication link impossible further, and a line connection activation means to perform re-connection actuation to a circuit when having become communication link impossible with the communication link disabling decision means is judged.

[0015] In this case, it judges that the communication link disabling decision means became communication link impossible. For example, it is the condition which the division data which judged whether division data would be received normally by the checksum in division data etc., and were received call 3 times of carrying out count continuation of predetermined and judging that a communication link is impossible when unusual. Moreover, when having become communication link impossible with the communication link disabling decision means is judged, a line connection activation means carries out call origination of the distribution center, and performs re-connection actuation of a circuit. Consequently, when a distribution center answers, a line connection is again carried out to a distribution center. Here, when a distribution center does not answer and a line connection is not made, it is also considered that a line connection activation means performs re-connection actuation repeatedly. By this, it is in the middle of reception of music data, and since the online karaoke terminal itself carries out a line connection to a distribution center again and it continues reception of music data automatically when it becomes communication link impossible, compared with the case where a user carries out, the distribution effectiveness of music data can be raised more.

[0016] In addition, considering acquiring music data for example, in the car which moves, when it enters in a tunnel of a car, it is possible [it] that communicating becomes impossible. At this time, even if it performs re-connection actuation of a circuit which was mentioned above for [until it comes out of a tunnel] several minutes, it is useless. Thus, when it is judged [taking a certain amount of time amount to lose the cause which causes communication link impossible, and] that the line connection activation means became communication link impossible with the communication link disabling decision means as shown in a premise, then claim 3, you may constitute so that re-connection actuation may be performed after fixed time amount progress.

[0017] In this case, after having become communication link impossible is judged, it waits for the fixed passage of time, such as 5 minutes, and re-connection actuation of a circuit is performed. In addition, as a result of also considering constituting so that re-connection actuation may be performed continuously until the line connection after fixed time amount progress and of the line connection activation means was carried out to the distribution center here, and performing re-connection actuation once, when a line connection is not carried out to a distribution center, constituting so that the fixed passage of time may be waited further and re-connection actuation may be carried out is also considered. to some extent [the communication link impossible cause once generated by this] — if time amount continuation is carried out, useless line connection actuation can be suppressed.

[0018] Thus, considering performing line connection actuation as efficiently as possible, adopting the configuration shown in claim 4 is also considered. The configuration namely, an online karaoke terminal Furthermore, it has an electric-wave receive state detection means to detect an electric-wave receive state, and an electric-wave receive state decision means to judge whether the electric-wave condition detected by the electric-wave receive state detection means is good. A line connection activation means is characterized by waiting for an electric-wave receive state to become good based on the decision result by the electric-wave receive state decision means, and being constituted so that line connection actuation may be performed, when having become communication link impossible with the communication link disabling decision means is judged. In this case, an electric-wave receive state detection means detects an electric-wave receive state. For example, it is possible to detect received field strength. Based on the detected electric-wave receive state, it judges whether an electric-wave receive state has a good electric-wave receive state decision means. And based on the decision result, it waits for an electric-wave receive state to become good, and re-connection actuation to a circuit is performed. By this, a line connection can be certainly carried out to a distribution center, and useless line connection actuation can be suppressed.

[0019] Although the above has been explained as invention of the online karaoke system which consists of a distribution center and an online karaoke terminal, as shown in claim 5, it is also realizable as invention of the online karaoke terminal which is used for the communication system mentioned above and becomes effective. Namely, it is the online karaoke terminal which receives music data through a wireless circuit from the distribution center which distributes the music data of karaoke music as two or more division data. It is the online karaoke terminal characterized by having a receiving track record storage means to memorize any of two or more division data were received, and a re-distribution demand means to require a distribution center to re-distribute non-received division data based on the receiving track record memorized by this receiving track record storage means.

[0020] In addition, since the explanation about a receiving track record storage means and a re-distribution demand means becomes being the same as that of explanation of the receiving track record storage means which the online karaoke terminal in an online karaoke system according to claim 1 has, and a distribution demand means, explanation here is omitted. Moreover, as it considered as the configuration equipped with a communication link disabling decision means or a line connection activation means as shown in claim 2, or shown in claim 3 As it constituted or indicated claim 4 that it waited for the fixed passage of time, and re-connection actuation of a circuit was performed, a line connection activation means It can consider as a configuration equipped with an electric-wave receive state detection means and an electric-wave receive state decision means, and based on the decision result by this electric-wave receive state decision means, it can also constitute so that a line connection activation means may perform re-connection actuation of a circuit.

[0021] Moreover, as shown in claim 6, it is also realizable as invention of the distribution center which is used for the online karaoke system mentioned above, and becomes effective. That is, it is the distribution center which distributes the music data of karaoke music to an online karaoke terminal through a wireless circuit, and it has a division data distribution means to distribute music data as two or more division data, and a division data distribution means is a distribution center characterized by re-distributing only the division data which correspond according to the re-distribution demand from an online karaoke terminal. In addition, since the explanation about a division data distribution means becomes being the same as that of the explanation about the division data distribution means which the distribution center in an online karaoke system according to claim 1 has, explanation here is omitted.

[0022]

[Embodiment of the Invention] Hereafter, 1 operation gestalt which materialized this invention is explained with reference to a drawing. Drawing 1 is the functional block diagram showing the outline configuration of the online karaoke system 1 of this operation gestalt.

[0023] The online karaoke system 1 serves as the online karaoke terminal 10 from the distribution center 30, and the music data of karaoke music are distributed to the online karaoke terminal 10 from the distribution center 30 through the wireless circuit for mobile communication which is not illustrated. Here, the distribution center 30 distributes music data per block (henceforth a "frame") of the number system which is a communication link transmission unit. Hereafter, the number attached respectively corresponding to the frame is considered as a frame number. In addition, the data of this frame unit are equivalent to "division data." On the other hand, the online karaoke terminal 10 acquires music data by receiving and remembering that a frame mentions later.

[0024] The karaoke activation section 20 which displays the words telop which the online karaoke terminal 10 doubled with the karaoke performance or the karaoke performance with the directions from the CC section 11 and the CC section 11, The portable telephone 19 for performing data communication through the wireless circuit for mobile communication between the distribution centers 30, The electric-wave condition decision section 16 which judges a received electric-wave condition, and the line control section 17 as a "line connection activation means" which makes cutting and connection of a circuit with the distribution center 30 through a portable telephone 19, The protocol transceiver section 18 which performs data transmission and reception, and the data judging section 15 as a "communication link disabling decision means" which judges the normality of the received data, The receiving track record storage section 14 as a "receiving track record storage means" which memorizes the receiving track record for every frame whether it is reception ending or it has received, It has the retry control section 13 as a "re-distribution demand means" which performs a re-distribution demand based on the receiving track record memorized by this receiving track record storage section 14, and the frame storage section 12 which memorizes the frame received normally.

[0025] The CC section 11 mentioned above has storage section 11a, and the music data which consisted of data of the frame unit memorized by the frame storage section 12 are memorized by storage section 11a. The karaoke activation section 20 is equipped with the display 23 which performs the words telop display doubled with karaoke accompaniment based on the words data in the music data memorized by storage section 11a of the performance section 22 which performs karaoke accompaniment based on the performance data in the music data memorized by storage section 11a of the control unit 21 for a user to request karaoke music and the CC section 11, and the CC section 11. Moreover, the information on the karaoke music requested from the control unit 21 is memorized by storage section 11a of the CC section 11 as reservation music information. Electric-wave receive state detecting-element 19a as a "electric-wave receive state detection means" which detects received field strength is prepared in the portable telephone 19, and the electric-wave condition decision section 16 mentioned above judges a received electric-wave condition based on the received field strength detected by this electric-wave receive state detecting-element 19a. In this semantics, the electric-wave condition decision section 16 is equivalent to a "electric-wave receive state decision means."

[0026] Next, actuation of the online karaoke system 1 of this operation gestalt is explained. First, actuation until distribution of the music data from the distribution center 30 is started is explained. In the online karaoke system 1 of this operation gestalt, the tune number number of the karaoke music for which a user asks through the control unit 21 of the karaoke activation section 20 of the online karaoke terminal 10 is inputted. The tune number number of the karaoke music inputted by the user from the control unit 21 is memorized by storage section 11a of the CC section 11 as reservation music information. At the online karaoke terminal 10 of this operation gestalt, the reservation music information to eight music shall be memorizable. The CC section 11 will output line connection directions to the line control section 17, if reservation music information is memorized by storage section 11a. Consequently, the line control section 17 carries out call origination of the distribution center 30 using the call origination function which a portable telephone 19 has. And if the online karaoke terminal 10 and the distribution center 30 are connected through the wireless circuit for mobile communication and the condition which can communicate is established when the distribution center 30 answers, the CC section 11 will require distribution of the music data which correspond based on the reservation music information memorized by storage section 11a. Distribution of music data is started from the distribution center 30 by this. In addition, the distribution center 30 notifies how many frames the music data of a distribution schedule consist of in advance of distribution of music data to the online karaoke terminal 10. Hereafter, explanation is continued as what 100 was notified to as a frame number.

[0027] Then, the reception of the online karaoke terminal 10 corresponding to distribution of the music data from the distribution center 30 is explained based on the flow chart of drawing 2 . This reception is processing performed by CPU which the online karaoke terminal 10 does not illustrate. In addition, it is made to correspond to the functional block diagram having shown processing by this CPU in drawing 1 , and explains.

[0028] In the first step S100, the data distributed through the wireless circuit for mobile communication from the distribution center 30 are received first, and a frame unit is transmitted. This processing transmits the data received with the portable telephone 19 to the data judging section 15 per frame through the protocol transceiver section 18.

[0029] In S110 continuing, it judges whether the received frame is normal. As for this processing, the data judging section 15 judges the normality of data based on the checksum in a frame. When it is judged that the frame received here is normal (S110:YES), it shifts to S115. On the other hand, when the received frame is judged to be unusual (S110:NO), it shifts to S150.

[0030] In S115, Counter C is initialized and it is referred to as 0. In S120 continuing, the frame judged to be normal is memorized in the frame storage section 12 S110. Moreover, in S130, the information which shows "finishing [reception]" to the frame received normally is memorized. This processing updates table 14a which shows "finishing [reception]" and "un-receiving". [which were prepared for the receiving track record storage section 14] This table 14a makes a frame number and a receiving track record correspond to drawing 5 so that it may be shown. Frame number [of table 14a] "1" - "100" is set up based on the frame number notified that it mentioned above in advance of distribution of music data from the distribution center 30. In the column of the receiving track record corresponding to the frame number of the frame which "x" which shows "un-receiving" shall be memorized and was received normally, "O" which shows "finishing [reception]" is memorized at the column of the receiving track record corresponding to the frame number of a non-received frame.

[0031] In S140, it judges whether reception of the music data of a distribution schedule was completed. Affirmative judgment is carried out, when this processing is performed based on table 14a of the receiving track record storage section 14 and all the columns of the receiving track record of table 14a become "O", namely, when all the frames that constitute the music data of a distribution schedule are received. This reception is ended when it is judged that reception of the music data of a distribution schedule was completed here (S140:YES). The music data acquired per frame are transmitted to storage section 11a of the frame storage section 12 to the CC section 11 after processing termination. And based on reservation music information, a karaoke performance is carried out by the performance section 22 of the karaoke activation section 20 at the order of reservation. Moreover, the display of the words telop doubled with the karaoke performance is performed by the display 23 of the karaoke activation section 20. By this, a user can double with karaoke accompaniment, can sing and can enjoy himself. On the other hand, when it is judged that reception of the music data of a distribution schedule is not completed (S140:NO in drawing 2), the processing from S100 is repeated.

[0032] In S150 which shifts when the frame by which negative judgment was carried out by the processing of S110 mentioned above, and which was case [the frame] namely, received is unusual, the frame number of the frame judged to be unusual is notified to the distribution center 30, and error generating is told. The data judging section 15 performs this processing through the protocol transceiver section 18. When data errors, such as data transformation, occur in the middle of data communication, only the frame which the data error generated is again distributed by this.

[0033] Counter C is incremented in S160. And in S170, it judges whether Counter C became three or more. Here, 3 times, continuously, when unusual, it is considered that it is communication link disabling by compulsory line disconnection having been performed in degradation of communication link disabling according [the received frame] to degradation of circuit quality or circuit quality having continued. When Counter C is smaller than 3 (S170:NO), the processing from S100 is repeated here. When Counter C is judged to be three or more on the other hand (i.e., when it judges that a communication link is impossible) (S170:YES), it shifts to S180.

[0034] Line disconnection actuation is performed in S180. The line control section 17 performs this processing through a portable telephone 19. Then, the re-distribution demand manipulation routine later mentioned in S190 is called. And termination of activation of a re-distribution demand manipulation routine repeats the processing from S100.

[0035] Then, the re-distribution demand processing called in S190 in drawing 2 is explained based on the flow chart of drawing 3 . It is the processing performed by CPU in which the online karaoke terminal 10 also has **** distribution demand processing, and which is not illustrated. Here, it explains, making it correspond with the functional block diagram shown in drawing 1 .

[0036] In the first step S200, received field strength is inputted first. Here, the electric-wave condition decision section 16 inputs the received field strength detected by electric-wave receive state detecting-element 19a of the portable telephone 19 in the online karaoke terminal 10. In S210, it judges whether receiving quality is good. This processing judges whether an electric-wave receive state is good based on the received field strength as which the electric-wave condition decision section 16 of the online karaoke terminal 10 was inputted. Here, when receiving quality is judged to be good (S210:YES), it shifts to S220. On the other hand, when receiving quality is judged not to be good (S210:NO), the processing from S200 is repeated. Only when a receive state becomes good, processing of S220 shift is performed by this.

[0037] Call origination processing is performed in S220. This processing carries out call origination of the distribution center 30 using the call origination function which a portable telephone 19 has [the line control section 17]. And in S230, it judges whether the line connection was carried out to the distribution center 30. Before a line connection is carried out here, this processing is repeated (S230:NO), and if a line connection is carried out when the distribution center 30 answers (S230:YES), it will shift to S240.

[0038] The memorized receiving track record is read in S240. This processing is processing which reads table 14a the retry control section 13 is remembered to be by the receiving track record storage section 14 based on the directions from the CC section 11. And in S250, based on read table 14a, the retry control section 13 notifies the frame number of a non-received frame to the distribution center 30, and requires re-distribution. For example, frame number "5" and frame number "10" - "100" is notified, and the table 14 shown in drawing 5 requires re-distribution. In addition, although the data error occurred in the middle of data reception and the frame of a frame number "5" made the error notification it (S150 in drawing 2), before receiving the frame distributed based on the error notification, it is shown that line disconnection was carried out.

[0039] Then, the re-distribution executive operation of the distribution center 30 corresponding to above-mentioned processing of S250 is explained based on the flow chart of drawing 4 . This processing is processing performed by CPU of the distribution center 30 which is not illustrated, and is processing performed immediately after a line connection with the online karaoke terminal 10. In addition, this processing is equivalent to processing by the "division data distribution means."

[0040] In the first step S300, it judges first whether there was any re-distribution demand from the online karaoke terminal 10. When there is a re-distribution demand here (i.e., when the frame number of a non-received frame is notified from the online karaoke terminal 10) (S300:YES), re-distribution of the frame which corresponds in S310 is performed. On the other hand, when there is no re-distribution demand (S300:NO), **** distribution executive operation is ended.

[0041] Thus, the distribution center 30 performs re-distribution of the corresponding frame to the re-distribution demand (S250 in drawing 3) from the online karaoke terminal 10 (S310 in drawing 4). By this, the online karaoke terminal 10 can acquire music data, without making useless the frame received before line disconnection by repeating the processing from S100 again shown in drawing 2 , after ending re-distribution demand processing.

[0042] Next, the effectiveness which the online karaoke system 1 of this operation gestalt demonstrates is explained. In addition, in order to make an understanding of explanation here easy, the trouble of the conventional online karaoke system is explained first. In the mobile communication through a wireless circuit, circuit quality may deteriorate in response to the effect of a surrounding building etc. Therefore, considering distributing the music data through the wireless circuit for mobile communication, communicating may become impossible in the middle of distribution of music data by compulsory line disconnection when degradation or its degradation condition of circuit quality continues. However, in the conventional online karaoke system, when a circuit is once cut, the whole music data is broadcast again on a specification. For this reason, all the data normally received at the online karaoke terminal before line disconnection become futility, and make the distribution effectiveness of music data fall as a result.

[0043] On the other hand, in the online karaoke system 1 of this operation gestalt, the data judging section 15 of the online karaoke terminal 10 judges the normality of data per frame (S110 in drawing 2). When the received frame is normal, while memorizing (S110:YES in drawing 2), and its frame (S120 in drawing 2), the receiving track record which shows that the frame is "finishing [reception]" is updated (S130 in drawing 2). And it is in the middle of reception of music data, and judges having become communication link impossible (S170:YES), and a circuit is once cut (S180 in drawing 2). And re-distribution of a non-received frame is required by reading the receiving track record remembered that a line connection is again carried out to the distribution center 30 (S240 in drawing 3), and notifying the frame number corresponding to a non-received frame to the distribution center 30 (S250 in drawing 3). (S230:YES in drawing 3)

[0044] In the distribution center 30, it judges whether there was any re-distribution demand from the online karaoke terminal 10 immediately after a line connection (S300 in drawing 4). When there is a re-distribution demand from the online karaoke terminal 10 here (i.e., when the frame number corresponding to a non-received frame is notified from the online karaoke terminal 10) (S300:YES in drawing 4), re-distribution of the corresponding frame is performed (S310 in drawing 4).

[0045] Thus, in the online karaoke system 1 of this operation gestalt, it is in the middle of distribution of music data, and communicating becomes impossible, even if it is a time of a circuit once being cut, it does not re-distribute about the frame which the online karaoke terminal 10 received once, and the online karaoke terminal 10 does not make useless the frame received before cutting of a circuit. The distribution effectiveness of music data can be raised by this.

[0046] Moreover, in the online karaoke system 1 of this operation gestalt, after judging having become communication link impossible and performing line disconnection (S170:YES in drawing 2) (S180 in drawing 2), based on the received field strength which electric-wave receive state detecting-element 19a of a portable telephone 19 detects, it judges whether receiving quality has the good electric-wave condition decision section 16 (S200 and S210 in drawing 3). And when receiving quality is judged to be good (S210:YES in drawing 3), the line control section 17 carries out call origination of the distribution center 30 through a portable telephone 19, and performs line connection actuation. A line connection is certainly made by this and useless line connection actuation can be lost by it.

[0047] As mentioned above, this invention is not limited to such an operation gestalt at all, and can be carried out with the gestalt which becomes various in the range which does not deviate from the main point of this invention. The online karaoke terminal 10 of the online karaoke system 1 of the above-mentioned operation gestalt Although it constituted so that it might wait to acquire received field strength and for receiving quality to become good and call origination processing might be performed after judging communication link impossible and performing line disconnection (S200-S220 in drawing 3) For example, you may constitute so that call origination processing may be performed, immediately after judging communication link impossible and performing line disconnection, or you may constitute so that call origination processing may be performed after fixed time amount progress.

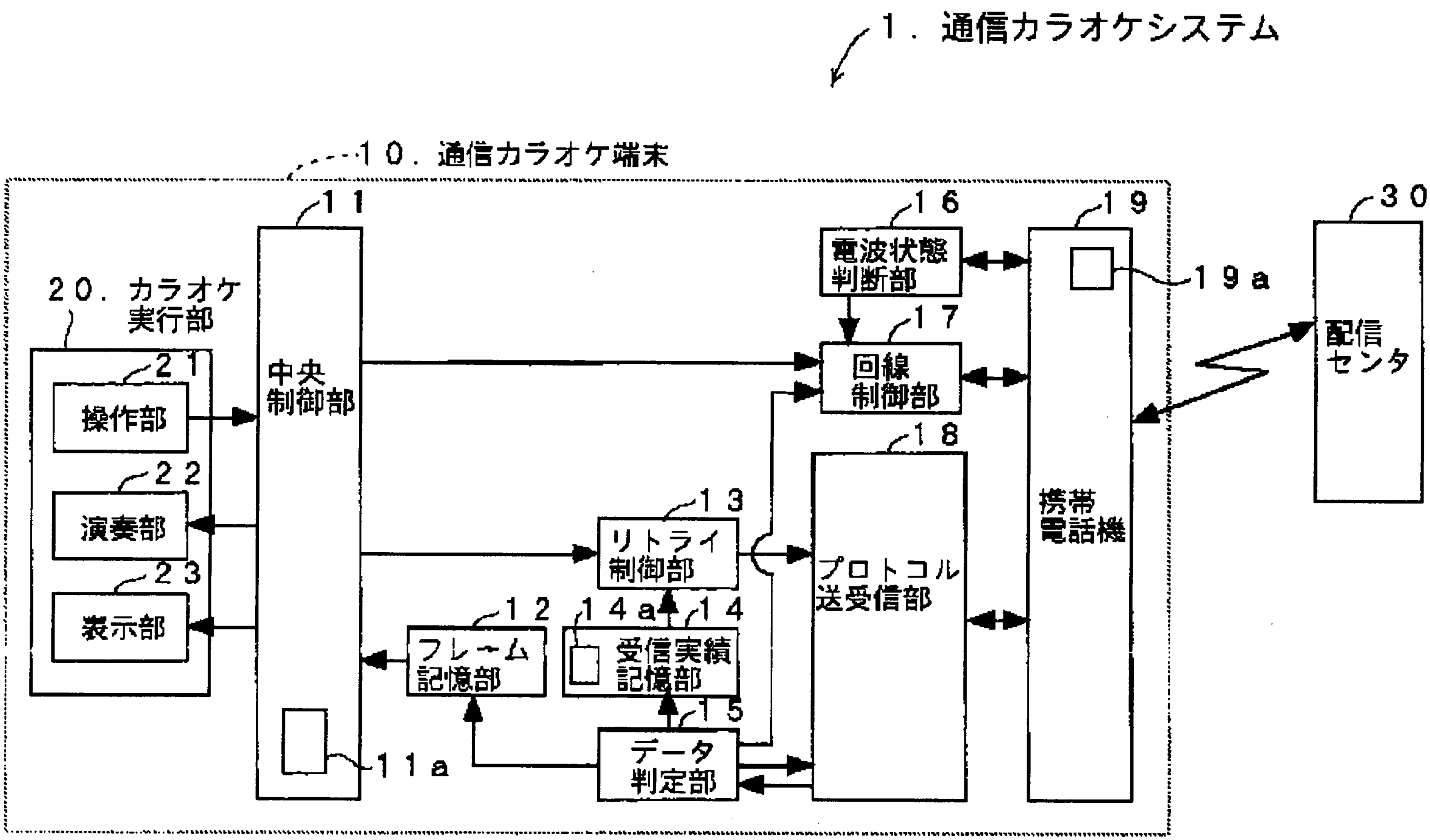
[0048] Moreover, although music data were distributed from the distribution center 30 with the above-mentioned operation gestalt by carrying out call origination from the online karaoke terminal 10, and requiring distribution of music data, music data may be made to distribute periodically from the distribution center 30. Although the frame number which constitutes music data in advance of distribution of music data was notified from the distribution center 30 with the above-mentioned operation gestalt further again, the online karaoke terminal 10 may memorize beforehand which karaoke music consists of how many frames.

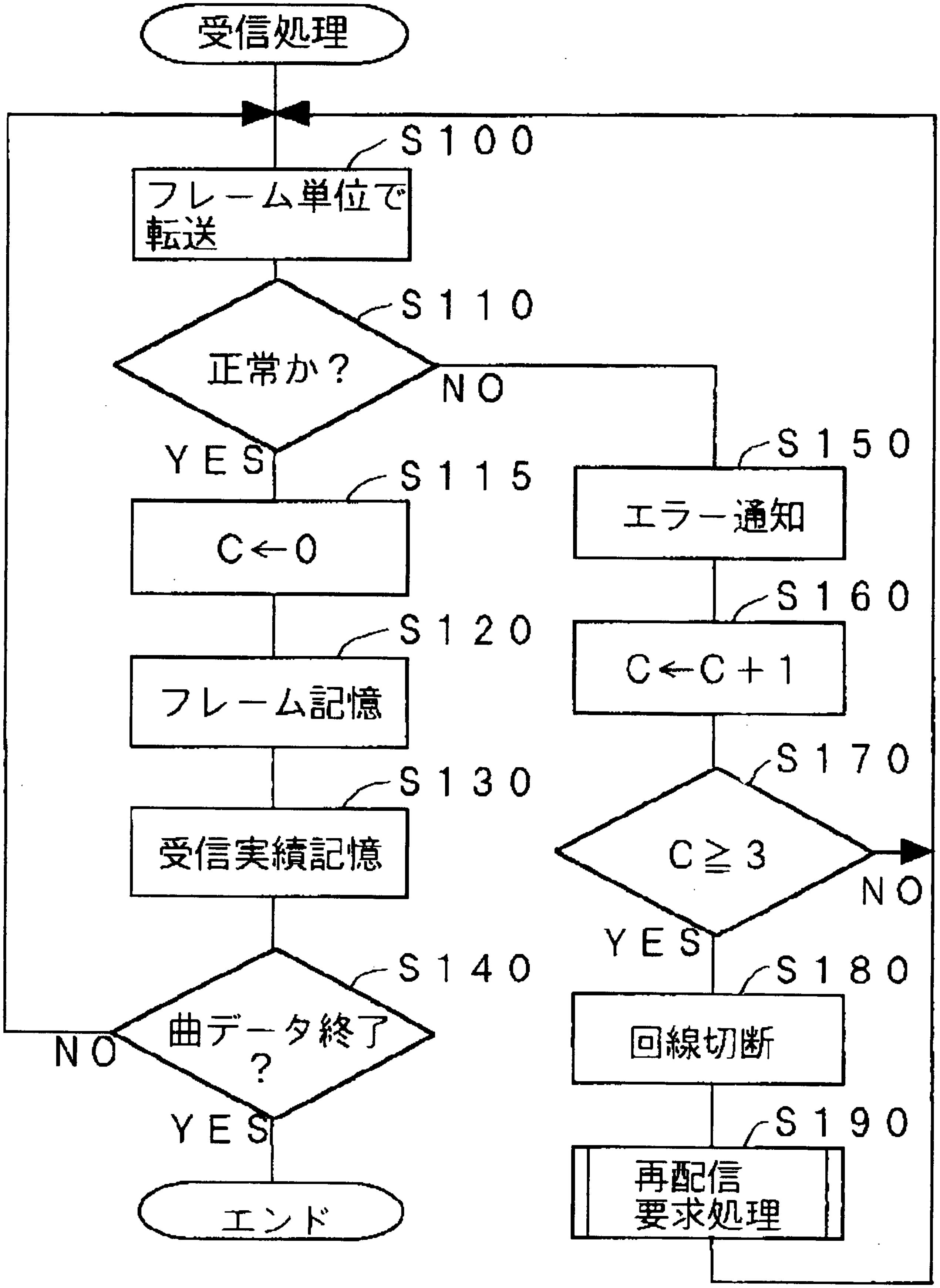
[0049] Although it was the configuration of having notified the frame number corresponding to a non-received frame, and requiring re-distribution from the distribution center 30 when the online karaoke terminal 10 had re-connection of a circuit, it notifies the frame number corresponding to a frame [finishing / reception], and you may make it require re-distribution with the above-mentioned operation gestalt. In this case, based on the frame number corresponding to the notified frame [finishing / reception], the distribution center 30 judges a non-received frame.
[0050] Moreover, although table 14a was memorized in the receiving track record storage section 14 and it memorized "finishing [reception]" or "un-receiving" to each frame with the above-mentioned operation gestalt, memorizing only the frame number corresponding to a frame [finishing / reception] is also considered. In this case, the frame number corresponding to a non-received frame is judged from the frame number corresponding to a frame [finishing / reception], and a re-distribution demand which was mentioned above is performed.

[Translation done.]

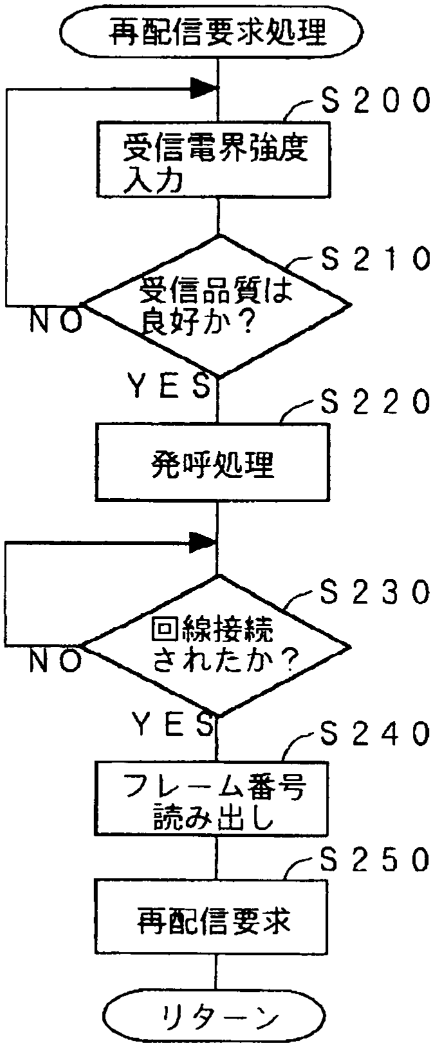
DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is the functional block diagram showing the outline configuration of the online karaoke system of an operation gestalt.
[Drawing 2] It is the flow chart which shows the reception in the online karaoke terminal of an operation gestalt.
[Drawing 3] It is the flow chart which shows the re-distribution demand processing in the online karaoke terminal of an operation gestalt.
[Drawing 4] It is the flow chart which shows the re-distribution executive operation in the distribution center of an operation gestalt.
[Drawing 5] It is the explanatory view showing the table which memorizes a receiving track record.
[Description of Notations]
1 — Online karaoke system
10 — Online karaoke terminal 11 — CC section
11a — Storage section 12 — Frame storage section
13 — Retry control section 14 — Receiving track record storage section
14a — Table 15 — Data judging section
16 — Electric-wave condition decision section 17 — Line control section
18 — Protocol transceiver section 19 — Portable telephone
19a — Electric-wave receive state detecting element 20 — Karaoke activation section
21 — Control unit 22 — Performance section
23 — Display 30 — Distribution center


1. 通信カラオケシステム
10. 通信カラオケ端末
20. カラオケ実行部
21 操作部
22 演奏部
23 表示部
11 中央制御部
11a
12 フレーム記憶部
13 リトライ制御部
14 受信実績記憶部
14a
15 データ判定部
16 電波状態判断部
17 回線制御部
18 プロトコル送受信部
19 携帯電話機
19a
30 配信センタ

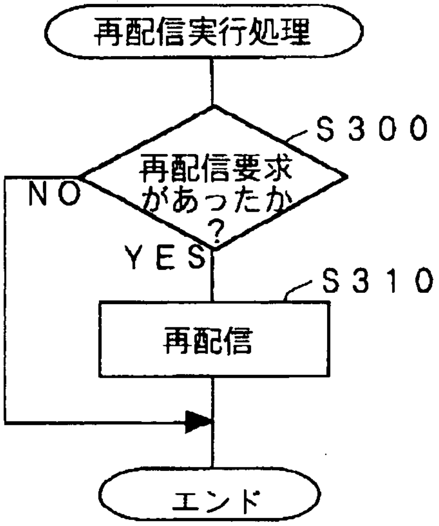

受信処理
S100
フレーム単位で転送
S110
正常か？
NO
YES
S115
C←0
S120
フレーム記憶
S130
受信実績記憶
S140
曲データ終了？
NO
YES
エンド
S150
エラー通知
S160
C←C+1
S170
C≧3
NO
YES
S180
回線切断
S190
再配信要求処理

Drawing selection drawing 3


再配信要求処理
S200
受信電界強度入力
S210
受信品質は良好か？
NO
YES
S220
発呼処理
S230
回線接続されたか？
NO
YES
S240
フレーム番号読み出し
S250
再配信要求
リターン

[Translation done.]

Drawing selection drawing 4


再配信実行処理
S300
再配信要求があったか？
NO
YES
S310
再配信
エンド

[Translation done.]

Drawing selection drawing 5

14a

フレーム番号	受信実績
1	○
2	○
3	○
4	○
5	×
6	○
7	○
8	○
9	○
10	×
11	×
12	×
13	×
⋮	⋮
99	×
100	×

[Translation done.]